

The Department of Theoretical Physics presents:

Daniel Angles

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talking about

Cosmological Zoom Simulations of $z = 2$ Galaxies

A large-scale cosmological zoom simulation of $z = 2$ galaxies. The image shows a complex network of yellow and orange filaments and clumps against a dark purple background. Several rectangular boxes are overlaid on the simulation, indicating zoomed-in regions. The text 'Cosmological Zoom Simulations of $z = 2$ Galaxies' is centered over the top half of the image.

In the first part of my talk I will present high resolution cosmological zoom simulations that focus on the impact of galactic outflows on the morphological, dynamical, and star formation properties of individual $z = 2$ galaxies. I will show that strong winds are required in order to maintain high gas fractions, redistribute star-forming gas over large scales, and increase the velocity dispersion of simulated galaxies, in good agreement with the large, extended, rotation-dominated yet turbulent star-forming disks revealed by spatially- and spectrally-resolved $H\alpha$ line observations of $z = 2$ galaxies. In the second part of my talk I will show how these simulations can be used to constrain the growth of supermassive black holes at the centers of galaxies and what we can learn from the observed correlations between black hole mass and properties of the host galaxy.

Wednesday, December 19, 2012 @ 15:00h, Sala 201 in Modulo C-15